



**BERGMANN**  
ARCHITECTS ENGINEERS PLANNERS

OPWDD GOWANDA DAY HABILITATION CENTER  
GOWANDA, NEW YORK

NYSDEC VCA SITE NUMBER V-00463-9

Soil Vapor Intrusion and Indoor Air Quality Sampling Work Plan



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Figure 1: Proposed Sub-Slab Vapor, Indoor Air, and Outdoor Air Sampling Locations



## 1. INTRODUCTION

Bergmann is submitting this proposed Soil Vapor Intrusion and Indoor Air Quality Work Plan for the former New York State Office for People with Developmental Disabilities (OPWDD) Gowanda Day Habilitation Center facility (the Site) located at 4 Industrial Place, Gowanda, Cattaraugus County, New York. These proposed Soil Vapor Intrusion and Indoor Air Sampling activities are intended to be performed in five (5) residential homes along Torrance Place.

The Dormitory Authority State of New York (DASNY) is working with the New York State Office of People with Developmental Disabilities (OPWDD) under a Voluntary Cleanup Agreement (VCA) with the New York State Department of Environmental Conservation (NYSDEC). This VCA details actions to be taken to investigate the extent of contamination at the Gowanda Developmental Disabilities Services Office (DDSO) Day Habilitation Center facility in Gowanda, New York. Bergmann has been working with the DASNY and the OPWDD since 2005 to provide operation of the remedial system that is addressing site contamination. The OPWDD is conducting this project as part of a VCA in accordance with the New York State Voluntary Cleanup Program. The OPWDD as the volunteer has entered into a VCA agreement with the NYSDEC to conduct this remediation in accordance with VCA Site # V-00463-9, effective August 16, 2001.

This work plan is based on work completed to date and known direction for project continuation between the NYSDEC, OPWDD and DASNY. Most recently, discussions with the agencies have expressed the requirement of revisiting a Soil Vapor Intrusion/Indoor Air Study in the homes adjacent to the Site, along Torrance Place.

## 2. BACKGROUND

The Gowanda Day Habilitation site consists of a 5.94-acre parcel located at 4 Industrial Place. The building, previously used by several manufacturing operations, was built in stages between circa 1948 and 1987 and was renovated in 1987-1988. New York State agencies occupied the building since 1982. New York State acquired the parcel in 1989. The building was most recently operated by the OPWDD, which at that time was known as the Western New York Developmental Disabilities Services Office, as a Day Habilitation Center for mental care clients. In April 2001, on-site operations ceased. The nature and extent of contamination at the Gowanda Day Habilitation Center was detailed as part of the 2003 Site Investigation and 2004 Supplemental Site Investigation Reports. Trichloroethene (TCE) was the most commonly detected compound. TCE degradation products cis-1,2-Dichloroethene (Cis-1,2-DCE), trans-1,2-Dichloroethene (Trans-1,2-DCE) and Vinyl Chloride (VC) were also detected.

Following Interim Remedial Measure (IRM) system installation, the Groundwater Treatment System (GTS) and the Soil Vapor Extraction System (SVES) were activated on May 10, 2005, recovering 2-5 gallons per minute (gpm) of groundwater. An additional groundwater recovery well, designated G-3, was installed outside the building and adjacent to MW-17 in November 2008. The GTS portion consists of seven (7) groundwater recovery wells (four dual phase recovery wells and three groundwater-only recovery wells), an air compressor, a network of controller-less pneumatic pumps and an air stripper treatment system to process recovered groundwater. Recovered groundwater was pumped to the equalization tank for settling of the sediment and transferred to the air stripper using a consistent flow rate. Air discharge from the air stripper was routed to the SVE for treatment prior to discharge. Groundwater was discharged to the village of Gowanda Sewage Treatment Plant (STP).



In January 2008, the building was decommissioned. The GTS was winterized with the addition of heat tape and insulation to conveyance lines and the installation of an independently operated suspended heater in the treatment area for the GTS and SVES (former Machine Shop). Quarterly groundwater sampling with Operation and Maintenance of the remediation system has been ongoing since 2002.

During January 2014, the condition of the SVE and GTS was discussed with the NYSDEC representative and it was agreed that these systems would be inactivated to allow for groundwater level recovery during the preparation of an In-Situ Chemical Oxidation (ISCO) Remedial Action Plan (RAP) and implementation of an ISCO treatment. Bergmann submitted an ISCO RAP for groundwater treatment to the NYSDEC to address remaining contamination at the Site in lieu of costly repair of the SVE and GTS. The SVE and GTS equipment will remain on site in the event that re-activation is required in the future. The ISCO was implemented in May 2015 and a second round of injections in September 2015. An ISCO Report was prepared and submitted under a separate cover. The SVE and GTS equipment remains on site in the event that re-activation is required in the future.

Proposed sub-slab, indoor air, and outdoor air sampling locations are shown on Figure 1.

### 3. PURPOSE

The purpose of this Soil Vapor Intrusion and Indoor Air Quality Work Plan is to assess current subsurface soil and sub-slab vapor quality beneath the residences existing down-gradient from the Site as well as analyze the indoor air quality within these residences. The addresses of these residences are as follows:

- 98 Torrance Place, Gowanda, New York 14070
- 106 Torrance Place, Gowanda, New York 14070
- 110 Torrance Place, Gowanda, New York 14070
- 114 Torrance Place, Gowanda, New York 14070
- 118 Torrance Place, Gowanda, New York 14070

The proposed activities for this SVI Work Plan include the commencement of around of indoor air quality and sub-slab air testing. Ten (10) indoor air quality and five (5) sub-slab vapor samples will be collected from inside the residences during the heating season in order to assess if Site contaminants are present inside the residences at levels that require continued corrective actions. One (1) sub-slab vapor sample will be collected from each residence. Five (5) of the ten (10) indoor air quality samples taken will be collected within the basements of the five (5) residences, while the remaining five (5) will be collected within the first floor of the five (5) residences, totaling two (2) indoor air quality samples per residence. One (1) outdoor air sample will be collected during the round of sampling for background comparison. Additionally, one (1) matrix spike/matrix spike duplicate sample and one (1) blind duplicate sample will be collected.

### 4. SUB SLAB INVESTIGATION METHODS

Five (5) sub-slab vacuum monitoring points, to be drilled by Bergmann personnel will be used to assess sub slab conditions. One (1) sub-slab vacuum monitoring point will be drilled in the basement of each of the five (5) residences listed in Section 3. The approximate locations of these sub-slab vacuum monitoring points are presented on Figure 1.

Sub-slab vapor samples will be obtained performed using the following procedure:



- Prior to sampling, the basement floor will be inspected for cracks and penetrations to the extent possible. A photoionization device (PID; ppb) will be used to screen the indoor air for volatile organic compounds (VOCs) to establish background levels. A floor plan sketch with locations of sumps, floor drains, penetrations, odors and PID readings (ppb) will be provided.
- Samples will be collected using 1-liter stainless steel SUMMA® canisters equipped with low-flow regulators. Canisters will be cleaned by the contracted laboratory prior to sampling. Samples will be taken from the five (5) depressurization vacuum monitoring points to be drilled by Bergmann.
- A temporary probe consisting of ¼-inch polyethylene tubing will be inserted approximately one-inch below the slab into existing sub-slab testing points. A rubber stopper may be used to hold the tubing in place.
- The floor surface at the penetration will be sealed with inert clay or 100% pure melted beeswax.
- One (1) to three (3) tubing volumes will be purged using a purge pump and collected in a Tedlar® bag prior to the beginning of sampling. Flow rate of the purge pump will be < 0.2 liters per minute. The regulator will be attached to the SUMMA® canister to commence the sampling. The vacuum reading will be recorded at the start of the sampling event.
- Photographs of each sample location, set-up and surrounding area will be taken.
- Upon completion of the sampling, the tubing will be removed and the cap of the existing test point will be replaced. A final vacuum check will also be performed on all canisters and recorded prior to submission to the contracted laboratory.

Concurrently, a proposed ten (10) ambient indoor air samples and one (1) outdoor ambient air sample will be taken over a course of 24 hours. Within each of the five (5) residences, one (1) indoor air sample location will focus on regularly occupied areas of the residences on the first floor, and one (1) indoor air sample location will be located within the basement near the sub-slab sample collection point.

One (1) outdoor ambient sample will be collected to characterize site-specific background outdoor air conditions within the general vicinity of the residences along Torrance Place. One (1) matrix spike/matrix spike duplicate, and one (1) blind duplicate sample will be collected for indoor air during the sampling event. Each sample will be collected in a certified clean SUMMA® canister.

All vapor samples will be collected in accordance with the NYSDOH Guidance for Evaluating Soil Vapor Intrusion in the State of New York (October 2006).

For preparation of the SUMMA® canister and collection of each sample, the following general procedures will be followed:

- Vapor samples must be collected in SUMMA® canisters for lab analysis. Each cleaned SUMMA® canister will have a certification check performed by the laboratory with the flow controller in place. If it is determined that a canister is contaminated, it will be re-cleaned and re-certified.
- To ensure the integrity of each sampling canister (SUMMA® canister), a vacuum check will be performed on the system prior to purging and collecting the sample. The vacuum reading will be recorded on the laboratory Chain of Custody (COC) and sample log sheet. A canister with less than 25 inches of Hg showing on the vacuum gauge prior to sampling will not be used.
- Each sample will be collected over a twenty-four (24) hour period, which ensures a flow rate of less than 0.2 liters per minute. The sampling rate of the canister will be controlled by the use of a



calibrated orifice within the flow controller. The calibrated orifice of each flow controller will be preset at the laboratory.

- A slight vacuum will be left in the canister at the end of the sampling period. The final vacuum will be noted on the COC and sample log sheet. Upon receipt, the laboratory must also check the vacuum in order to document that the canister did not leak during transit.

Ideally, the indoor air monitoring should be performed during the heating season (typically November 15 to March 31). Since DASNY does not own nor occupy the residences, we will notify the owners and occupants of the residences by mail of our intent to perform the proposed sampling. Bergmann will request the residential occupants that windows and doors (to the extent practicable) be kept closed and that no smoking or solvent use occurs within the residences at least 48 hours prior to the sampling event, and that the residences remain closed as best as possible until the sampling has been completed. It should be understood that to Bergmann's knowledge, the five (5) residences are currently occupied.

In conjunction with the vapor-sampling event, the current owners/occupants of the residences will be interviewed using the "New York State Department of Health Indoor Air Quality Questionnaire and Building Inventory" form to assist in establishing background information, chemical use inventory, and any pertinent information relevant to the structure and occupants. It is recommended that only constituents of concern historically linked to the groundwater impacts at the Site are analyzed for during the SVI and indoor air monitoring events.

The indoor ambient vapor samples will be placed within the building three (3) to four (4) feet above floor level. The outdoor ambient sample will also be collected three (3) to four (4) feet above ground level. Following the sampling event, the SUMMA® canisters will be submitted to Centek Laboratories, LLC an ELAP-certified laboratory, for analysis of VOCs via by EPA Method TO-15, limited to Site groundwater constituents with Category B deliverables. If required, a data usability summary reports (DUSR) will be generated once full deliverables are received.

All New York State and United States Center for Disease Control and Prevention (CDC) Coronavirus disease 2019 (COVID-19) guidelines will be followed in the conduct of this sampling event. Additionally, Bergmann personnel will be required to be masked and wearing nitrile gloves anytime work is being performed in one of the residences.

## 5. REPORTING

Bergmann will prepare a summary letter report to submit to the NYSDEC and NYSDOH for review once analytical results from the first round are received and tabulated. Any subsequent indoor air sampling events will be summarized and submitted to the NYSDEC and NYSDOH once completed. Upon submittal of the final report, DASNY will request a conclusive decision on subsequent action. It is understood that the determination from the indoor air sampling will conclude in one of three resolutions:

- 1- No further action determination;
- 2- Execution of an additional monitoring plan; or
- 3- Mitigation and/or continued monitoring in communication with NYSDOH, NYSDEC, DASNY, and OPWDD.

